

Amendments to the Claims:

1. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit wherein that is soluble and retain the functional characteristics of the full-length or wild-type $\alpha_2\delta$ subunit from which it derives

(a) It is soluble and retains the functional characteristics of the full-length or wild type human $\alpha_2\delta_2$ subunit from which it derives;

(b) its δ peptide has a C-terminal truncation with respect to the complete δ peptide from which it originates, said truncation being sufficient to render the truncated δ peptide soluble; and

(c) its α_2 peptide comprises at least the ligand-interacting part(s) of the complete α_2 peptide from which it derives.

2. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to claim 1 wherein the full-length or wild-type $\alpha_2\delta$ subunit from which it derives is of mammalian origin the amino acid sequence consists of SEQ ID NO: 4, SEQ ID NO: 5 or SEQ ID NO: 6.

3. (Canceled)

4. (Canceled)

5. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,4 to 4, wherein the full-length or wild-type $\alpha_2\delta_2\alpha_2\delta$ subunit from which it derives is naturally expressed in the cerebral cortical.

6. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,1 to 5, wherein the full-length or wild-type $\alpha_2\delta_2\alpha_2\delta$ subunit from which it derives is voltage-dependent.

7. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,1 to 6, wherein the $\alpha_2\delta$ subunit is cleaved.

8. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,1 to 7, wherein the $\alpha_2\delta_2\alpha_2\delta$ subunit is cleaved into separate α_2 and δ peptides.

9. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to claim 81, wherein the α_2 and δ peptides are disulfide-bridged.

10. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,1 to 6, wherein the $\alpha_2\delta_2\alpha_2\delta$ subunit is not cleaved.

11. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,4 to 10-characterized in that it is purified or isolated.

12. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,1 to 11-characterized in that it is processed as the full-length or wild-type $\alpha_2\delta_2\alpha_2\delta$ subunit from which it derives is naturally-processed.

13. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,4 to 12 characterized in that it is producable by the a baculovirus/insect cells expression system.

14. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,4 to 13 characterized in that it is produced by the baculovirus/insect cells expression system.

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,45 or 17 characterized in that ligand is gabapentin, L-Norleucine, L-Allo-Isoleucine, L-Methionine, L-Leucine, L-Isoleucine, L-Valine, Spermine or L-Phenylalanine.

19. (Currently Amended) A calcium channel $\alpha_2\delta_2$ subunit according to any one of claims claim 1,4 to 18 characterized in that its α_2 peptide comprises at least the ligand-interacting part (s) of the complete α_2 peptide from which it originatesderives, its δ peptide comprises at least the ligand- interacting part (s) of the complete δ peptide from which it originatesderives, and its δ peptide does not comprise a part of the transmembrane domain of the complete δ peptide from which it derives originates which renders said calcium channel insoluble.

20. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 1,4 to 19 wherein the full-length or wild-type $\alpha_2\delta_2\alpha_2\delta$ subunit from which it derives or originates is $\alpha_2\delta_2-\alpha_2\delta_3$ or $\alpha_2\delta_4$.

21. (Canceled)

22. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to claim 20, or 24 characterized in that the amino acid sequence of its unprocessed form comprises or consists of SEQ ID NO: 4, SEQ ID NO: 5 or SEQ ID NO: 6.

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Currently Amended) A calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit characterized in that its α_2 peptide and its δ peptide have 99%, 98%, 97%, 96%, or 95% homology or identity with the α_2 peptide and the δ peptide respectively of a calcium channel $\alpha_2\delta_2\alpha_2\delta$ subunit according to any one of claims claim 11 to 34.

36. (Canceled)

37. (Canceled)

38. (Canceled)

39. (Canceled)

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Canceled)

45. (Canceled)

46. (Canceled)

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48. (Canceled)

49. (Canceled)

50. (Canceled)

51. (Canceled)

52. (Canceled)

53. (Canceled)

54. (New) A calcium channel $\alpha_2\delta_2$ subunit according to claim 1 wherein the amino acid sequence consists of SEQ ID NO: 4, SEQ ID NO: 5 or SEQ ID NO: 6 and its α_2 peptide and its δ peptide have 99%, 98%, 97%, 96%, or 95% homology or identity with the α_2 peptide and the δ peptide respectively of a calcium channel $\alpha_2\delta_2$ subunit.